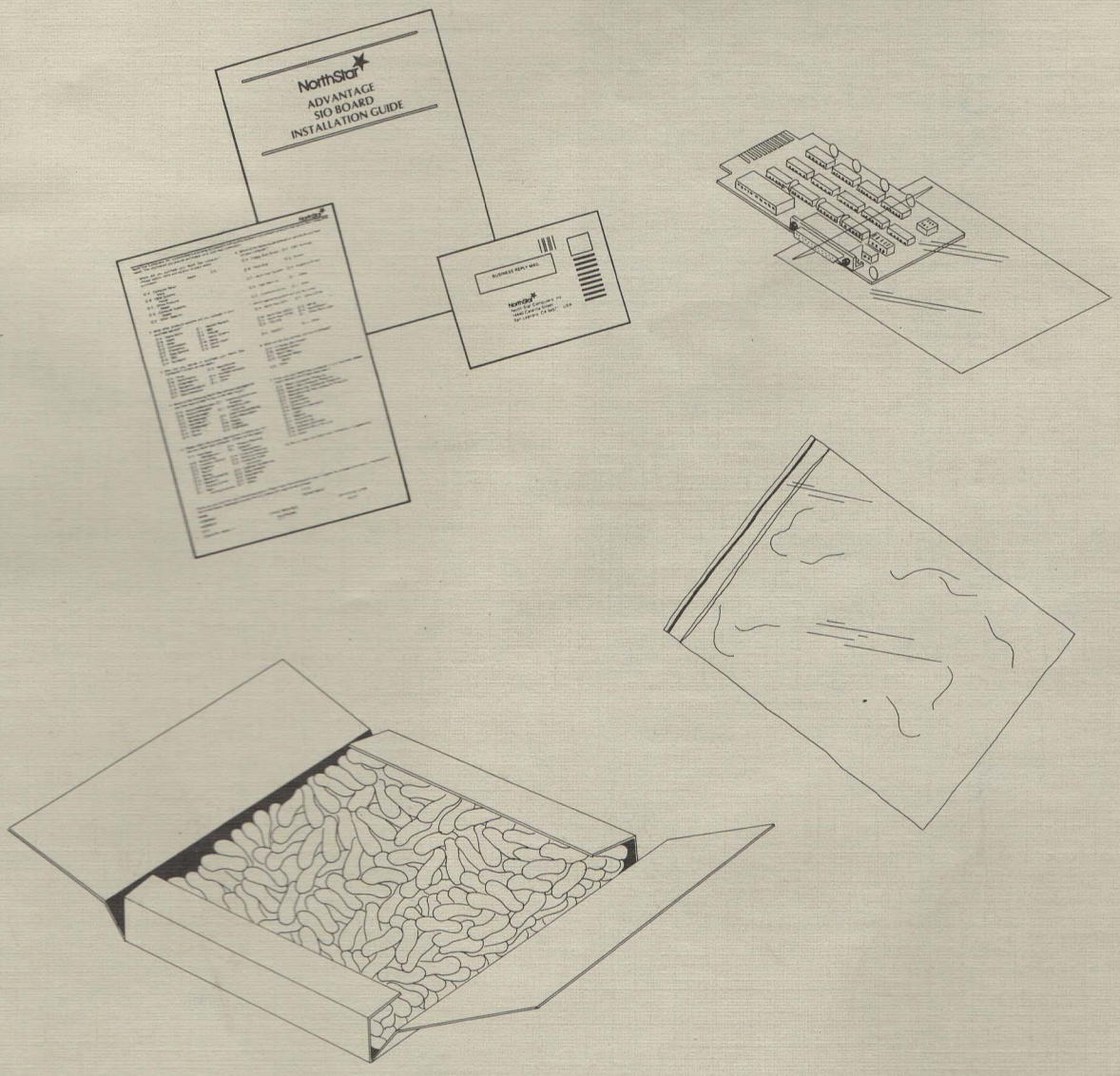
NorthStar™

ADVANTAGE™ SIO BOARD INSTALLATION GUIDE



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GENERAL 1

This Guide contains a step-by-step procedure for installing the Serial Input/Output (SIO) board into the ADVANTAGE computer. The ADVANTAGE computer comes equipped with one SIO board already installed. The instructions in this Guide can be used for installing an SIO board into any of the six I/O slots in the ADVANTAGE cabinet.

1.1 PACKING ASSEMBLY

The SIO Board Assembly comes complete with SIO board and screwlock assemblies for connection to the ADVANTAGE.

1.2 CONFIGURATION

As shipped, the SIO board is configured for asynchronous modem operation and is ready for immediate connection to an asynchronous RS-232 device such as a terminal or North Star-supplied serial printer. Connection to most asynchronous devices requires no configuration changes.

To adapt the SIO board for other asynchronous configurations or for synchronous operation, refer to the ADVANTAGE Technical Manual. The Technical Manual also contains detailed information on programming the SIO board.

1.3 CABLING

In addition to the SIO Board Assembly, you will need a cable with DB25 connectors to connect the serial I/O device (e.g., printer) to the SIO board in the ADVANTAGE.

Cables can be ordered separately if one is not supplied with the serial I/O device. The RS-232 Standard supports cables up to a maximum of 50 feet in length. However, longer cable lengths will work in many cases. Cables from 5 feet up to 250 feet can be ordered from North Star.

INSTALLATION 2

To install the SIO board, you will need to:

- Remove the ADVANTAGE cover to gain access to the I/O connector area, described in Section 2.1.
- Install the SIO board as described in Section 2.2.
- Reinstall the ADVANTAGE cover.

The following tools are used in the installation procedure:

- One small flatblade screwdriver
- One 6 or 8 inch Phillips screwdriver
- One 3/16 inch nut driver.

2.1 OPENING THE ADVANTAGE CABINET

SUMMARY OF PRECAUTIONS

Disconnect the power source before opening the cover. Unplugging from the rear of the machine (rather than removing the power plug from a wall socket that may have several plugs) assures disconnection.

Be extremely careful not to bump any objects against the video tube (attached to the top cover). Pay particular attention to this when removing or installing the top cover.

Be extremely careful of the high voltage lead on the CRT. The red suction cup/clip connected to the side of the CRT is the high voltage connector; avoid touching this area and the video tube in general.

Handle the printed circuit boards carefully, as the undersides have sharp pin protrusions.

To open the ADVANTAGE cabinet, proceed as follows:

1. Disconnect the AC power source: Turn the Power ON/OFF switch to OFF. Unplug the power cord from the back of the machine.
2. Loosen the cable retaining screws and disconnect any I/O cables that may be connected to the rear of the ADVANTAGE cabinet.

CAUTION

Be sure to support the cable while disconnecting the cable retaining screw from the I/O board. Excessive strain may cause the retaining nut inside the cabinet to work loose. IF THIS OCCURS, BE CERTAIN TO REMOVE THE LOOSE NUT FROM THE MAIN PRINTED CIRCUIT BOARD BEFORE PROCEEDING.

3. Remounting screws: Six mounting screws are located on the bottom of the ADVANTAGE as shown in Figure 2-1. To reach the mounting screws, grasp the unit firmly and carefully turn it on its back or side. As the screws are taken off, hold the top and bottom parts of the unit together. When the screws have been removed, grasp the two parts firmly and carefully return the unit to the upright position.

Bottom View of ADVANTAGE

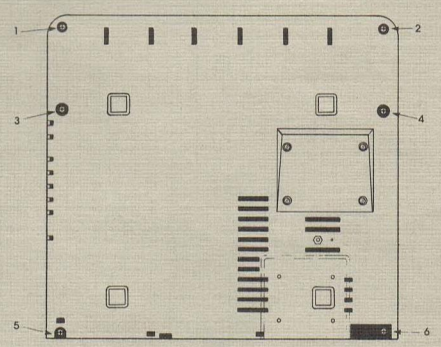

Figure 2-1

4. Open the cabinet: The closed cabinet is shown in Illustration A of Figure 2-2. Carefully lift the Cover Assembly straight up to the position shown in Illustration B.

CAUTION

Do not move the Cover Assembly sideways. The CRT tube, located in the Cover Assembly, is fragile and easily damaged if bumped against other components.

Rotate the Cover Assembly backwards as shown in Illustration C, allowing it to rest on its rear surface with the CRT screen facing up. The final position is shown in Illustration D.

Cabinet Separation Sequence

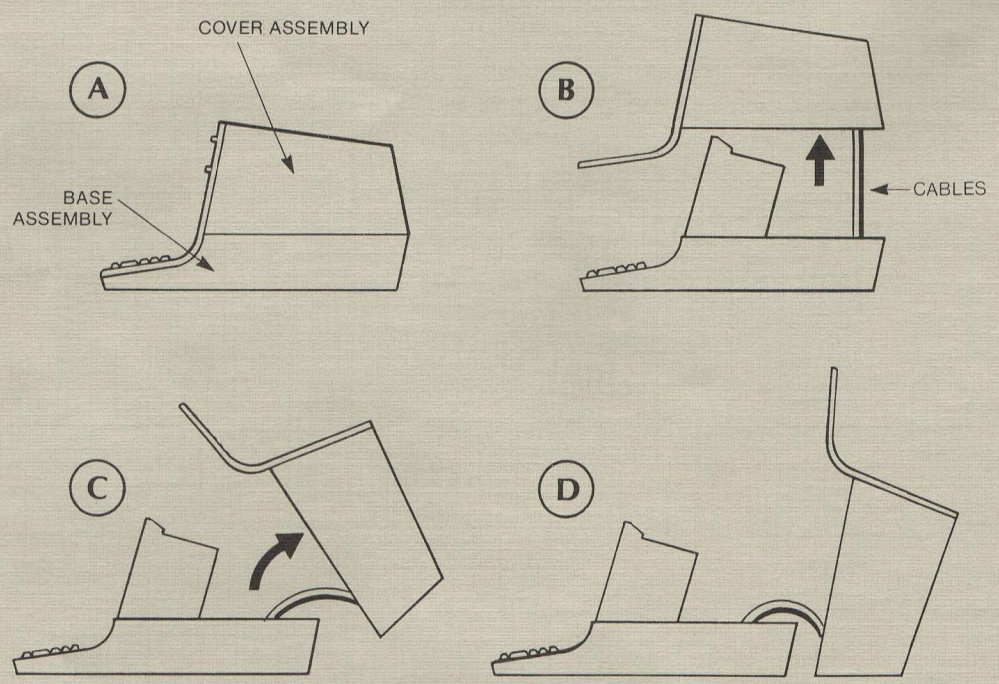

Figure 2-2

2.2 INSTALLING THE SIO BOARD

NOTE

The steps below describe removal of I/O boards that have built-in nuts at the connector holes (see A of Figure 2-3). Older SIO or PIO boards may already be installed that have external nuts at the connector holes (see B of Figure 2-3). If you have boards secured with external nuts, the removal procedure must be modified slightly to prevent any freed nuts from falling onto the Main printed circuit board, as follows:

SIO boards — At step 2 do not remove the screw. Instead, loosen the screw only enough to free the I/O plate. This leaves the external nut assembly intact.

PIO boards — At step 3 leave PIO boards secured to the I/O plate and remove as a unit from the ADVANTAGE cabinet (step 4). Then remove PIO boards and proceed. At step 7 secure PIO boards to the I/O plate before reinstallation.

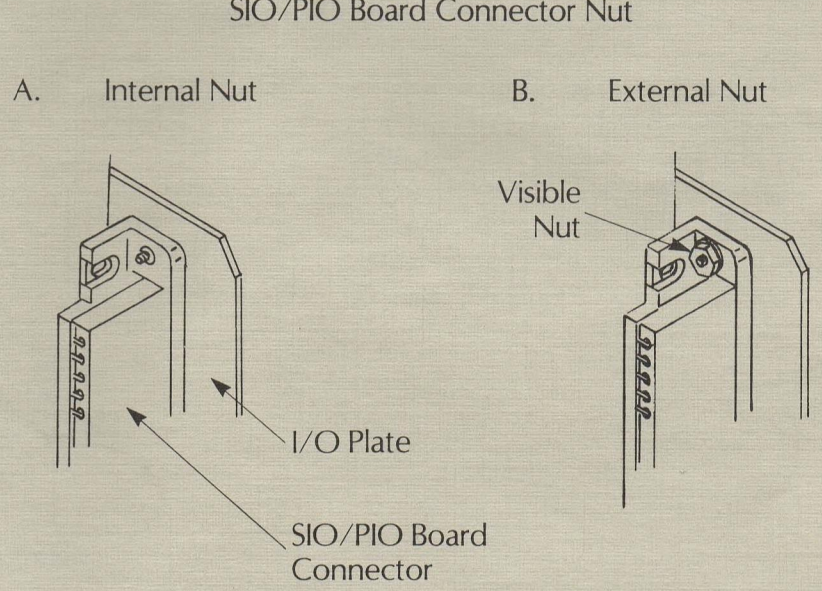

Figure 2-3

1. At the rear of the cabinet, remove the two retaining screws that hold the I/O plate in place.

2. Disconnect the SIO board in slot 1 from the I/O plate by removing the holding (top) screw with a nut driver.

3. If there are additional boards installed, disconnect them also. To disconnect PIO boards, remove top and bottom retaining screws. To disconnect an HD-5 board (in slot 6), remove the retaining screw from the square bracket, which completely separates board and I/O plate.

4. Lift out the I/O plate, carefully disengaging it from the installed board(s). Leave disconnected board(s) standing in their connector socket(s).

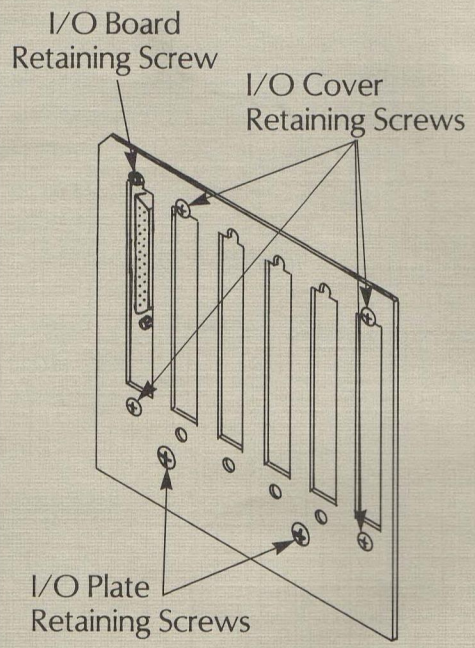

Figure 2-4

5. With a pencil or other sharp object, punch out the top screw hole in the I/O cover at the slot adjacent to the slot being opened (see Figure 2-5). Move the retaining screw from the top of the slot being opened to the newly created hole.

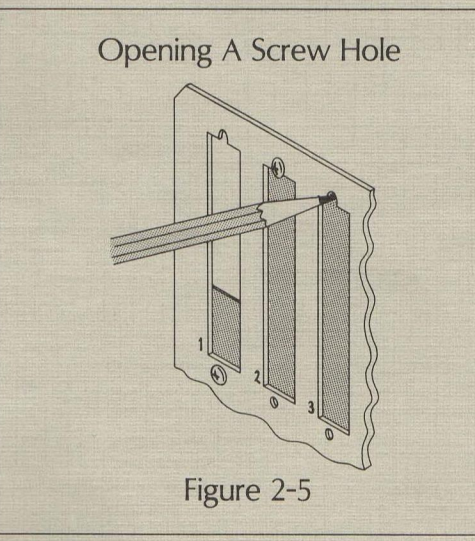

Figure 2-5

6. Turn the I/O plate around so that the I/O cover (shiny side) is facing you. Following the lined perforations, pull down on the I/O cover at the slot being opened (see Figure 2-6). This removes the I/O cover material at that slot. For the SIO board, remove only the top portion of the I/O cover.

   If slots are opened in nonconsecutive order, additional screws may be needed to secure the remaining pieces of the I/O cover.

Removing I/O Cover Slot

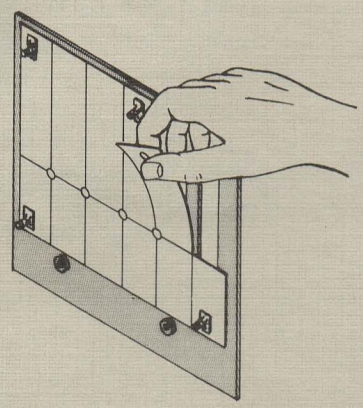

Figure 2-6

7. Reinstall the I/O plate: Place it in the original position and install the two retaining screws.

NOTE

If you are using an older SIO connector with external nuts, insert the screw assembly into the bottom hole of the I/O connector as shown in Figure 2-7. Secure the screw tightly with a nut driver. Then loosely install the upper nut assembly as shown in Figure 2-7.

External Nut Assembly (Older Version)

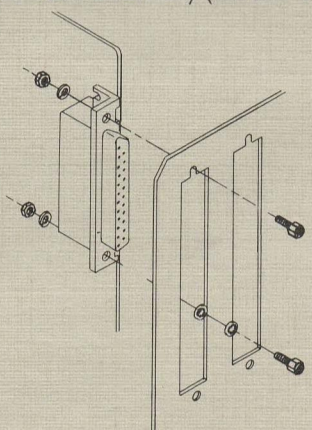

Figure 2-7

8. You are now ready to install the new SIO board. First, with the SIO board free, remove the upper (retaining) screw assembly. Leave the bottom assembly intact on the SIO board. The lower screw does not connect to the I/O plate. The screw assemblies are shown in Figure 2-8.

SIO Screw Assembly

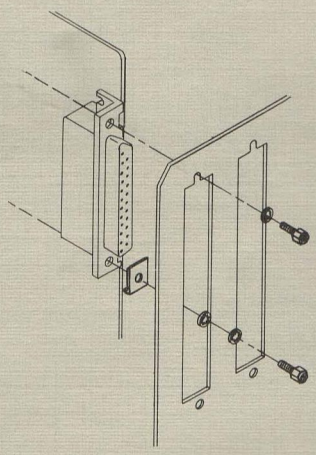

Figure 2-8

9. Position the board in the I/O slot. Figure 2-9 shows the SIO board correctly positioned.

Positioning the SIO Board

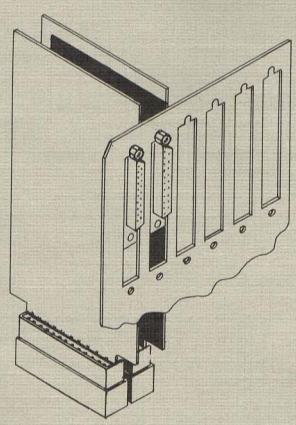

Figure 2-9

NOTE

For SIO boards with external nuts, position and secure the already assembled upper screw components and proceed to step 11.

10. From the back of the cabinet, install the retaining nut screw at the top hole of the SIO board's connector. Refer to Figure 2-8. Tighten the screw with a nut driver. This screw secures the SIO board to the I/O plate.

11. If there are additional boards, install all nut screws that were removed and tighten them with a nut driver.

The SIO board is now completely installed.

2.3 REASSEMBLING THE ADVANTAGE CABINET

To reassemble the ADVANTAGE cabinet, perform the disassembly sequence (Section 2.1) in reverse. When reinstalling the cables, include the cable for the newly installed SIO board.

The ADVANTAGE is now fully reassembled and ready for power on.

6. How many persons does your organization employ?
   - ☐ Self-employed
   - ☐ 2-9
   - ☐ 10-49
   - ☐ 50-99
   - ☐ 100-499
   - ☐ 500 or more

7. What is your organization's approximate annual sales revenue?
   - ☐ Under $500,000
   - ☐ $500,000-$1 million
   - ☐ $1-25 million
   - ☐ Over $25 million

8. Please indicate your level of satisfaction with the vendor from whom you purchased your computer on each of the following factors.

	Very Satisfied 1	Satisfied 2	Not Satisfied 3
Service	☐	☐	☐
Training	☐	☐	☐
Installation	☐	☐	☐
Technical knowledge	☐	☐	☐
Understands needs	☐	☐	☐

9. What peripherals did you buy with the product?
   - ☐ Printers
     Manufacturer _____ Model _____
   - ☐ Terminals
     Manufacturer _____ Model _____
   - ☐ Other (Specify) _____
     Manufacturer _____ Model _____

10. Do you have any additional comments or suggestions?

_____

_____

_____

_____

_____

_____

_____

Thank you very much for your time and assistance.

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Important Warranty Information

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North Star Computers, Inc. Limited Factory Hardware Warranty

North Star Computers, Inc. warrants to the original retail Customer for a period of ninety (90) days from date of purchase that the electrical and mechanical parts of the product were free from defects in material and workmanship when shipped by North Star. If such defects are detected, North Star will repair these at no cost to the Customer provided that the Customer has not improperly used or assembled the product.

North Star's obligation under this Warranty is limited to replacing or repairing, at its option, any of the products (except expendable parts thereof) that within the Warranty Period are found by North Star to be defective, provided that these products are returned to North Star through an Authorized North Star Agent (Dealer, Distributor or OEM).

Customer shall prepay transportation charges to North Star. If returned parts are replaced or repaired under the terms of this Warranty, North Star will prepay domestic U.S. transportation charges back to Customer; otherwise, Customer shall pay transportation charges in both directions.

This Warranty is invalid if any of the instructions included in the accompanying documentation are not completely followed. Warranty does not include any repair or replacement necessitated by any casualty, misuse, or unauthorized repair or modification. Nor does it include repair or replacement of software products (which are covered by separate limited warranty agreements).

NO WARRANTY, EXPRESSED OR IMPLIED, IS EXTENDED CONCERNING COMPLETENESS, CORRECTNESS, OR SUITABILITY OF THE NORTH STAR HARDWARE FOR ANY PARTICULAR APPLICATION. THIS LIMITED FACTORY HARDWARE WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. THE LAWS AFFECTING THIS WARRANTY VARY BY STATE, AND YOU MAY HAVE ADDITIONAL RIGHTS UNDER THE LAWS OF YOUR STATE.

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Warranty Card

To facilitate warranty coverage, please fill in the information below completely and mail this form back to North Star Computers, Inc. within ten (10) days of purchase.

Model

Serial Number

Date Purchased (Mo/Day/Yr)

Name (Last, First, Middle Initial) ☐ Mr. ☐ Ms.

Company

Department

Street Address

City, State/Province

Zip/Postal Code

Country (Non-U.S.)

( )
Telephone Number

Dealer Name

City

We would appreciate it if you could spend a few moments answering the following questions. This information will be used to enable North Star to continue to provide our customers with quality hardware and software products.

1. Where did you first learn about the North Star computer you purchased? (Please check one only)

☐ Advertisement in newspaper or magazine

(Publication) _____

☐ Article in a newspaper or magazine

(Publication) _____

☐ Colleague
☐ Trade show
☐ Computer dealer

☐ Other (Specify) _____

2. What was the *primary* reason you decided to purchase a North Star computer? (Check one only)

☐ Price
☐ Performance
☐ Expandability
☐ Reliability
☐ Manufacturer reputation
☐ Recommendation
☐ Part of system
☐ Availability of software

☐ Other (Specify) _____

3. What will be the *primary* use of your North Star computer? (Check one only)

☐ Business
☐ Scientific
☐ Industrial
☐ Education
☐ Personal use

4. Please check the *three* primary applications in which you will use your North Star computer most often. (Check three only).

☐ Accounting
☐ Billing
☐ Data Acquisition
☐ Data Base Management
☐ Data Communications
☐ Engineering Design
☐ Financial Analysis
☐ Graphics
☐ Inventory Control
☐ Mailing List
☐ Order Entry
☐ Payroll
☐ Project/Time Management
☐ Software Development
☐ Statistics/ Computation
☐ Word Processing

☐ Research (Specify) _____

☐ Personal (Specify) _____

☐ Other (Specify) _____

5. Which industry classification most closely describes you or your organization? (Check one only)

☐ Retail trade
☐ Wholesale trade
☐ Manufacturing
☐ Agriculture
☐ Printing and publishing
☐ Banking and finance
☐ Construction
☐ Real Estate
☐ Insurance
☐ Transportation

Services:
☐ Legal
☐ Medical/Dental
☐ Accounting
☐ Data Processing
☐ Engineering/ architectural
☐ Food
☐ Non-profit organization

☐ Government (Specify) _____

☐ Education (Specify) _____

☐ Research (Specify) _____

☐ Other (Specify) _____